



The MIAMI EXPRESS FAA/ SAFETY NEWSLETTER

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Volume 4, Issue 5

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Safety Program

Our mission is to enhance safety awareness within the local aviation community and industry through open positive communications and an effective, realistic training program.

Our Goal is to create an atmosphere, which fosters a friendly customer service interaction.

Address & Phone

The Miami FSDO-19 address is:
DOT/FAA/FSDO-19/SPM Office
8600 NW 36th St. Suite 201
Miami, FL 33166
Michael C. Thomas, Manager
Phone # 305-716 -3400
Rene Alvarez, SPM 305-716-3401
Walter A. Wilson, SPM 305-716-3432
FAX # 305-716-3437

Internet Home Page address is:

<http://www.faa.gov/fsdo/mia>

Wings & AMT Awards

We have updated our awards process, which has increased our output efficiency and decreased the time frame for issuance of awards.

However, without your participation and timely submission of awards applications we cannot recognize you and your employees accomplishments.

Remember to review AC 61-91 & AC 65-25B and include all required supportive documentation when submitting an award application.

If you are interested in having a FAR seminar conducted at your facility, contact:
Rene At 305-716-3401 or
Walter A. Wilson, 305-716-3432



Wings Awards

Phase I

Fred Larsen
Marc J. Pagan
Frank D. Moruzzi
Elsie Metcalf
Gerald L. Metcalf
John A. Solakian
Melanie Emmons Damian
Nicolas Daniel
Raul Rodriguez
Javier Virginie
Mac Antonio Guido
Carlos Manuel Iguina
David R. Shelton
Andres Marin
Ravi Khullap
Alexander Loor
Lazaro Casares
Teobaldo Fuentes
Jason Lynden Sweeting
Alvin Noel Lugo
Deddy A. Hernandez
Edgar J. Figueroa
Carlos Lopera
Jeremy D. Ian Vandersluis





Wings Awards

Phase II

William S. Coull

James H. Kennedy

Phase III

J. McCauley

Carl Silva

Phase IV

Carol J. Collins

Phase XII

A. J. Furst

CERTIFICATE OF ATTENDANCE

Special Recognition

for All Pilots

Why Participate?

Regular proficiency training is essential to the safety of all pilots and their passengers. The objective of the "*Pilot Attendance Award Program*" is to encourage pilots to establish and participate in a continuous Personal Recurrent Training Program.

Who May Participate?

All pilots holding an Recreational Pilot Certificate or higher. In addition, uncertified pilots of qualified ultralight vehicles under FAR Part 103 may participate in the Attendance Program.

How Does the Program Work?

The Program consist of three certificates. For the *Silver* Certificate you must attend at least four (4) Aviation Safety Seminars per year, for the *Gold* Certificate you must attend at least eight (8) Aviation Safety Seminars per year, and for the *Diamond* Certificate you must attend at least ten, (10) Aviation Safety Seminars per year. ***For any of the three certificates you must be currently active in the Wings Program.***

The program is design to work during the fiscal year, example; beginning October 1, 2001 and ending September 30, 2002. Either the Safety Program Manager or the Aviation Safety Counselors for each of the monthly seminars attended must sign the *Certificate of Attendance*.

At the end of the fiscal year (**September 30**) the Certificate of Attendance are submitted to the address below for processing. After 30 days the Aviation Safety Program Managers will issue the appropriate Certificate of Recognition.

“Sunglasses in Aviation: A Primer for Pilots”

There is more to consider besides good looks when choosing sunglasses for flying.

By Ronald W. Montgomery & Van Nakagawara, OD

Sunglasses are as much a part of the pilot mystique as are the white scarf and leather jacket. More than just a symbol of aviator, sunglasses play an important role in safeguarding a pilot's most important sensory asset—vision. A good pair of sunglasses is essential in the cockpit environment to preserve optimal visual performance by reducing some of the effects of harsh sunlight, minimizing eye fatigue, and protecting ocular tissues from exposure to harmful solar radiation. Conversely, using a pair of inappropriate sunglasses provides inadequate protection and may reduce visual performance.

A pair of qualify sunglasses incorporating shatter - resistant lenses can protect a pilot's eyes from injuries resulting from impacts with objects (i.e., flying debris from a bird strike or sudden decompression). In addition, appropriately tinted sunglasses can aid the dark adaptation process, which can be compromised or delayed after prolonged exposure to bright sunlight.

Radiation. In addition to visible light, the sun gives off invisible radiation that can damage skin and eyes when exposure is too excessive or intense. Fortunately, the Earth's atmosphere shelters us from the hazardous solar radiation (i.e., gamma rays and X-rays); however, both infrared (IR) and ultraviolet (UV)

Test Your Aviation Knowledge

1. The term angle of attack is defined as the angle.
 - A. formed by the longitudinal axis of the airplane and the chord line of the wing.
 - B. between the wing chord line and the relative wind.
 - C. between the airplane's climb angle and the horizon.
2. If the engine oil temperature and cylinder head temperature gauges have exceeded their normal operating range, the pilot may have been operating with.
 - A. the mixture set too rich.
 - B. Too much power and with the mixture set too lean.
 - C. higher-than-normal oil pressure
3. During the run up at a high-elevation airport, a pilot notes a slight engine roughness that is not affected by the magneto check but grows worse during the carburetor heat check. Under these circumstances, what would be the most logical initial action?
 - A. Taxi back to the flight line for a maintenance check.
 - B. Reduce manifold pressure to control detonation.
 - C. Check the results obtained with a leaner setting of the mixture
4. While cruising at 9,500 feet msl, the fuel/air mixture is properly adjusted. What will occur if a descent to 4,500 feet msl is made without readjusting the mixture.
 - A. The excessively rich mixture will create higher cylinder head temperatures and may cause detonation.
 - B. The fuel / air mixture may become excessively lean.
 - C. There will be more fuel in the cylinders than is needed for normal combustion, and the excess fuel will absorb heat and cool the engine.
5. What change occurs in the fuel / air mixture when carburetor heat is applied.
 - A. A decrease in rpm results from the lean mixture.
 - B. The fuel / air mixture becomes richer.
 - C. The fuel / air mixture becomes leaner.
6. If the grade of fuel used in an aircraft engine is lower than specified for the engine, it will most likely cause
 - A. Detonation.
 - B. Lower cylinder head temperatures.
 - C. A mixture of fuel and air that is not uniform in all cylinders.

See page 7 for answers



Future Seminars

January

January 7, 2004

7:00pm - 9:00pm

Location: Lorenzo Walker Institute of Technology, 3702 Estey Ave. Naples, FL 34104

Topic: Composite

Speakers: Victor Lopez

Sponsor: Miami Aircraft Structure

January 14, 2004

7:00pm - 9:00pm

Location: Miami FSDO, 8600 N. W. 36th St. Miami, FL 33166, 3rd floor conference room.

Topic: ATC & You / Runway Safety

Speaker: Hank Tracy / B. J. Ault

Sponsor: AvMart Aviation Superstore.

January 15, 2004

7:00pm - 9:00pm

Location: Marathon Airport, Departure Lounge, 9400 Overseas Hwy, Marathon FL.

Topic: S.A.T

Speakers: Bob Stangarone

Sponsor: Paradise Jet Support / Collins Aviation

January 20, 2004

7:00pm - 9:00pm

Location: Miami FSDO, 8600 N. W. 36th St, Miami, FL 33166, 3rd floor conference room.

Topic: Troubleshooting Principles

Speaker: Jimmy Torres,

Sponsor: Miami Safety Program



January

January 21, 2004

7:00pm - 9:00pm

Location: Naples Airport, Pilot Lounge, 220 Aviation Dr. South, Bldg 1100, Naples, FL

Topic: FSS DVFR / ADIZ & ICAO

Speakers: Tom Hofbauer,

Sponsor: TBA

February

February 10, 2004

7:00pm - 9:00pm

Location: Naples Airport, Pilot Lounge, 220 Aviation Dr. South, Bldg. 1100, Naples, FL

Topic: Aeronautical Charts

Speaker: Richard R. Neher

Sponsor: TBA

February 11, 2004

7:00pm - 9:00pm

Location: Miami FSDO-19, 8600 N.W. 36th St. 3rd Floor Conference Room.

Topic: Aeronautical Charts

Speakers: Richard R. Neher

Sponsor: Safety Program

February

February 12, 2004

7:00pm—9:00pm

Location: Marathon Airport, Departure Lounge, 9400 Overseas Hwy, Marathon, FL

Topic: Aeronautical Charts

Speaker: Richard R. Neher

Sponsor: Middle Keys EAA

February 18, 2004

7:00pm-9:00pm

Location: Miami FSDO-19, 8600 NW 36 St. 3rd Floor Conference Room, Miami, FL

Topic: Hand Tool Safety

Speaker: Doug Richardson

Sponsor: Armstrong Tools

February 18, 2004

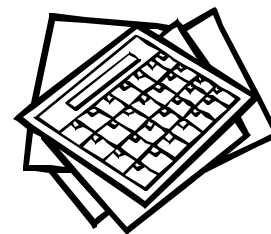
7:00pm-9:00pm

Location: ALCA Avionics, Inc., 4281 NW 145th St. Bldg 40 Hangar #3, Opa Locka Airport

Topic: GPS

Speakers: Dave Brown (Garmin)

Sponsor: ALCA Avionics, Inc



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“Sunglasses in Aviation”

Radiation are present in our environment in varying amounts, depending on factors such as the time of day, time of year, latitude, altitude, weather conditions, and the reflectivity of surrounding surfaces. For example, flying in an open-cockpit aircraft around noon on a spring (or fall) day, over the equator and above a layer of clouds, results in a much higher exposure to solar radiation than being at sea level on a cloudy winter's morning in the northern US or Canada. Obviously, differences in time of day, the seasonal angle of the sun, and altitude can vary UV exposure; however, less well known are the differences associated with the relative thinness of the atmosphere's UV-absorbing ozone layer at the equator and Earth's poles, as well as reflective property of clouds, which can reflect 40 to 90% of incoming solar radiation back toward an aviator when flying above a thick cloud layer.

Atmospheric IR consist of long-wavelength, low-frequency radiation (700 - 1400 nanometers (nm)) found in the electromagnetic spectrum between visible light (400—700 nm) and microwaves. IR provides the warmth felt from the sun and is thought to be harmless to the skin and eyes at normal atmospheric exposure levels. More hazardous to human tissues is short-wavelength, high-frequency UV radiation. UV is divided into three bandwidths: UVA (400-320 nm), UVB (320-290 nm), and UVC (<290 nm). Excessive or chronic

exposures to UVA and (to greater extent) UVB can cause sunburn, most skin cancers, and is implicated in the formation of cataracts, macular degeneration, and other eye maladies. The American Optometric Association recommends wearing sunglasses that incorporate 99-100% UVA and UVB protection. Fortunately, UVC, the most harmful form of UV radiation, is absorbed by the atmosphere's ozone layer before it reaches the Earth's surface. Some scientists believe, however, that depletion of the ozone layer may allow more UV to pass through the atmosphere, making 100% UV protection a wise option when selecting eyewear.

Lens Materials. The three most common lens materials in use today Are crown glass, (CR-39 monomer) plastic, and polycarbonate plastic lenses. Glass lenses provide excellent optical properties and are more scratch resistant but are heavier and less impact resistant than CR-39 plastic or polycarbonate lenses. Glass a absorbs some UV light, and UV absorption can be improved by adding certain chemicals to the lens material during the manufacturing process or by applying as special coating. Glass hold tints better over time but, for higher prescriptions lenses, the color may be less uniform, as parts of the lens will be thicker than others. Glass photochromic lenses (PhotoGray and PhotoBrown) automatically darken when exposed to UV and become lighter in dim light.

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Special Recognition for All Pilots

What's In It for Me?

Statistics show that pilots who participate in recurrent training programs have a much better safety record when compared to those pilots who don't. This program provides a pilot with an opportunity to demonstrate and improve their flight proficiency and knowledge by attending safety seminars.

How Do I Participate?

You may participate by attending the Aviation Safety Seminar given by the FAA Aviation Safety Program Managers or any o f the Counselors and currently be active in the Wings Program.

Note: This Special Pilot Recognition Awards Program *is only* being offered in the Miami area by the Miami FSDO-19 Safety Program. Miami, FL 33166

Send Completed Application to:

FEDERAL AVIATION

ADMINISTRATION

Miami Flight Standards

District Office-19

8600 NW 36th Street, Suits 201

Miami, FL 33166

ATTN: Rene Alvarez, SPM

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Sunglasses in Aviation

Most of the darkening takes place in the first 60 seconds. While lightening may take several minutes. Although most photochromic glass lenses can get as dark as regular sunglasses (approximately 20% light transmittance in direct sunlight), their darkened state may be lighter due to the reduce UV exposure through the windscreen. In addition, the faded state of photochromic glass lenses may not be clear enough to be useful when flying in cloud cover or at night.

Plastic lenses possess excellent optical qualities, are lighter weight and more impact resistant than glass lenses, but they are more easily scratched, even with scratch-resistant coatings. Polycarbonate plastic lenses are even lighter than CR-39 plastic and one of the most impact-resistant lenses available. When a high refractive correction is required, polycarbonate lenses may have poorer optical qualities than CR-39 plastic unless an anti-reflective (AR) coating is added. Polycarbonate lenses come from the manufacturer with a scratch-resistant coating that is much stronger than that applied to CR-39 plastic lenses and have built-in UV protection. (Note: CR-39 plastic lenses must have special coatings applied to protect the eyes from harmful UAB radiation.) CR-39 lenses can be tinted to any desired shade with little color variation, even for those requiring a great deal of refractive correction but they do not hold

Their tint as well as glass. CR-39 plastic can be bleached and re-tinted if fading becomes excessive at some point. Since polycarbonate lenses do not accept dye as readily as CR-39 plastic, the interior anti-scratch coating absorbs most of tint. CR-39 and polycarbonate photochromic lenses, like their glass counterparts, automatically darken in bright sunlight and become lighter in dim light. There have been complaints that they do not darken as well as photochromic glass lenses in the enclosed cockpit environment or in warmer weather. Finally, high-index materials (i.e., index of light refraction > 1.60) are available in both glass and plastic for those who required a large degree of refractive correction and desire lighter, thinner lenses.

Tints. The choice of tints for sunglasses is practically infinite. The three most common tints are gray, gray-green, and brown, any of which would be an excellent choice for the aviator. Gray (neutral density filter) is recommended because it distorts color the least. Some pilots, however, report that gray-green and brown tints enhance vividness and minimize scattered (blue and violet) light, enhancing contrast in hazy conditions. Yellow, amber, and orange (i.e., "Blue Blockers") tints essentially eliminate all short-wavelength light from reaching the wearer's eyes and reportedly sharpen vision, although no scientific studies have offered evidence to support this claim. In addition, these tints are known to distort colors considerably, making it difficult to distinguish between green

and red lights (aviation signals, anti-collision, and navigation lights). For flying, sunglass lenses should screen out only 70-85% of visible light without appreciably distorting color. Tints that are not recommended for the flying due to the possibility of reduced visual acuity (e.g., 20/20 Snellen visual acuity may be reduced to 20/40 or 20/600, resulting in difficulty seeing instruments and written material inside the cockpit.

Polarized Lenses. Polarized lenses, which can block reflected glare from horizontal surfaces, such as water or snow, are not recommended for the aviation environment. Polarization can reduce or eliminate the visibility of instruments that incorporate anti-glare filters, and they may interfere with visibility through an aircraft windscreen by enhancing striations in laminated materials. In addition, polarized lenses can mask the sparkle of light that reflects off shiny surfaces, such as another aircraft's wing or windscreen, which can reduce the time a pilot has to react in a "see-and-avoid" traffic situation.

Frames. The selection of sunglass frames is probably more a matter of personal preference than lens material or tint. The frames of an aviator's sunglasses, however, must be functional and not interfere with communication headsets or protective breathing equipment. Frame style that incorporate small lenses may not be practical, since they allow too much

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Sunglasses in Aviation

visible light and UV radiation to pass around the edges of the frame. A sunglass frame should be sturdy enough to take some abuse without breaking and light enough to be comfortable.

Fit. An aviator's sunglasses should fit well so that sudden head movements from turbulence or aerobatic maneuvers do not displace them. The use of necklace chain or strap to secure the sunglasses to the pilot's head is recommended in case they become accidentally dislodged or must be removed briefly (i.e., to view objects in the cockpit, or when flying in and out of cloud cover) and subsequently replaced.

In summary, while adding to the mystique of an aviator, sunglasses protect a pilot's eyes from glare associated with bright sunlight and harmful effects from exposure to solar radiation. Lenses for sunglasses that incorporate 100% UV protection are available in glass, plastic and polycarbonate materials. Glass and plastic lenses have superior optical qualities, while polycarbonate lenses are lighter and more impact-resistant. The choice of tints for use in the aviation environment should be limited to those that optimize visual performance while minimizing color distortion, such as gray, gray-green, or brown tints with 15-30% light transmittance. Polarized sunglasses are not

Recommended because of their possible interaction with displays or other materials in the cockpit environment. For an aviator, a pair of sunglasses is an Important asset, whether or not refractive correction is required. Therefore, careful consideration should be used when selecting an appropriate pair of quality sunglasses for flying.

Mr. Montgomery is a Vision Research Specialist at the FAA's Civil Aerospace Medical Institute in Oklahoma City, OK. Dr. Nakagawara is a Research Optometrist at Civil Aerospace Medical Institute, and he is also a charter member of the American Optometric Association's Aviation Vision Committee.

Answers to the test

1. B.
2. B.
3. C.
4. B.
5. B.
6. A.



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Future Seminars

March

March 10, 2004

7:00pm—9:00pm

Location: Miami FSDO, 8600 N.W. 36th St. Miami, FL, 3rd floor conference room

Topic: Aviation Terrorism

Speaker: Orlando Villaverde

Sponsor: AvMart / Roberto Soriano

March 11, 2004

7:00pm—9:00pm

Location: Marathon Airport, Departure Lounge, 9400 Overseas Hwy, Marathon, FL

Topic: Helicopters 101

Speaker: Lt. Mike Pandol, Monroe County Sheriff Office

Sponsor: Monroe County Sheriff Aviation Department

March 16, 2004

7:00pm—9:00pm

Location: Miami FSDO, 8600 N.W. 36th St., 3rd floor conference room, Miami, FL

Topic: Composite

Speaker: Victor Lopez

Sponsor: Miami Aircraft Structure

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AVIATION HUMOR!

Future Seminars

March

March 17, 2004

7:00pm-9:00pm

Location: Naples Airport, Pilot Lounge, 220 Aviation Dr. South, Bldg 1100, Naples, FL

Topic: CFI Role and Responsibilities

Speaker: Rene Alvarez, SPM & others

Sponsor: TBA

March 23, 2004

7:00pm-9:00pm

Location: Lorenzo Walker Institute of Technology, 3702 Estey Ave., Naples, FL 34104

Topic: Helicopter Basics

Speakers: Joe Fragione

Sponsor: TBA

